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## THE RESULT OF THE TEACHING OF THE EFFECT OF ALCOHOL ON THE HUMAN SYSTEM

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The discussion of the teaching of the effect of alcohol must begin with the legislative work requiring this instruction. There had to be an arrest of thought on the subject of alcohol before any law could be passed requiring that the child in the school room be taught the truth concerning the nature and effects of alcoholic drinks, and of narcotics in general. The United States was deriving revenue from the sale of alcoholic liquors, the people were not certain that such drinks, taken moderately, were bad. The convictions of the people had to be changed regarding alcohol before any law could be passed. The first work, therefore, which had a clear, definite result was the creation of the sentiment regarding alcohol that crystallized in laws for compulsory education. These are now written upon the statute books of every one of our states, and of the United States. As the Woman's Christian Temperance Union reads these laws to-day, it sees back of them an education of the people who were the lawmaking power. It sees years of agitation through the pulpit, platform, the public press, every possible agency that could be used for the dissemination of truth. It clearly realizes that a very large part of the attitude of the people to-day toward alcohol began in the agitation for the first compulsory law for scientific temperance instruction in the State of Vermont. This law was enacted in 1882, and the agitation went on in every hamlet, village, and city of the United States, until every legislature had been educated up to the point of passing a similar or far better law.

Side by side with the legislative work went one of even farther reaching importance in its results,—the bringing together the facts from scientific investigation concerning alcohol and putting them

in such a form that teachers could intelligently present the truth concerning alcohol to the children with the aid of well-graded text-books. An unwritten science had been engrafted upon the public school system, and the text-book had to be created. The advice, "Be understood in thy teaching, and instruct to the measure of capacity," was the principle underlying the preparation of the new text-books. Sir Benjamin Ward Richardson, of England, had published his studies on alcohol, its nature and effects upon the human system, and these demonstrated facts, carefully incorporated with other facts in physiology and hygiene, formed the basis of the teaching.

In 1905, a committee was appointed by the American Academy of Medicine to make a careful study of the text-books of physiology and hygiene that were being used in the public schools at that time. More than three years were given to investigation and the salient portion of the report reads as follows: "The subjects have been simplified until we have thirty-seven text-books for elementary grades, reaching thirteen and one-half million children who go no further in the school. . . . Twenty-two years ago, the time of the enactment of the first law, there were practically none.

"The average proportion of hygiene is one-third of the modern text-book, a little more in elementary grades, and less in the high school. A very few give more than half their pages to it.

"Scientific progress is reflected not only in many details of accuracy of statements, but also in added teachings concerning cells, cerebral localization and the nervous system; bacteria, communicable diseases, dust, antiseptics; inspection of schools, foods and milk; common intoxicants and patent medicines.

"There are fewer pathological details (or they are selected with greater discretion) and more attention to the normal states. The ideal of a healthy, active, physical life as a basis for success and happiness is kept in the foreground and made more interesting. That 'success depends on health' is fortified in several books by numerous lately discovered facts in school work and business life."

The result, then, of this preparation of text-books was to bring to the public school a new ideal in the teaching of physiology and hygiene; for, as Professor L. D. Harvey, the newly elected president of the National Educational Association, says, "The aim of scientific temperance instruction is, first, to have the pupils learn the

natural action of each organ, that they may understand how to keep them in good order; second, to show that all bodily organs are so related that when one suffers the others suffer also; third, to help the pupils to recognize what a splendid thing it is to possess a vigorous body and abounding health and to realize that a sound body is an essential factor both in the problem of making a living and in the broader one of making a life; fourth, to make the pupils feel that it is both a matter of manly pride and of moral duty to keep the house we live in clean and strong and wholesome; fifth, to teach the bad effects of stimulants and narcotics in a sensible way, by laying less stress upon the drunkard's stomach and hob-nailed liver, and more upon the joy of possessing a body, strong in limb, rich in clean blood, steady in nerve, clear in brain, needing no other stimulant than plenty of pure air, wholesome food and invigorating sunshine."

Dr. Luther H. Gulick, physical director of the schools of New York City, says, in his preface to Good Health (Gulick Hygiene Series), "During the past few years important contributions have been made to the fund of material bearing upon the effects of the use of alcohol. These contributions have come partly from scientific work in Germany, England and America, partly from recent careful investigations concerning the interrelations of drink with crime and pauperism, and partly from the practical anti-alcohol requirements on the part of large business corporations. The facts, so contributed, together with those more generally known, furnish a story of such exceptional vividness and power that in regard to scientific instruction on the subject of alcohol and narcotics we cannot but be faithful to the demands of school law in the various states." How scientific text-books are regarded by educators may be seen by the following letter written to Dr. C. F. Hodge, of Clark University, by Dr. A. F. Waters, superintendent of schools, Georgetown, Ohio:

DEAR SIR: This letter is prompted by a temperance story found in a little book entitled "Good Health," just published by Ginn & Co., a copy of which the publishers were kind enough to send me. The basis of the story is the result of a series of experiments by yourself upon some kittens and pups which had been given alcohol in their food for quite a period of time. The facts, as set forth in this article, appeal to me as one of the greatest temperance lessons I ever saw given. We are giving the story, if I may call

it such, to all grades in our school. The story of the effects appeals to the judgment of our pupils as no other temperance lesson has ever done.

In the "Declaration of Principles," formulated by the National Educational Association at their convention of 1908, there is this significant statement, "The National Educational Association wishes to record its approval of the increasing appreciation among educators of the fact that the building of character is the real aim of the schools and the ultimate reason for the expenditure of millions upon their maintenance." How scientific temperance instruction in the public schools helps in the molding of character may be seen from the following statement of Mr. Charles S. Davis, superintendent of schools in Amsterdam, New York, in 1897: "I have had several years' experience in another state (Pennsylvania), and in a school of more than seven hundred pupils. I saw the continued teaching of temperance physiology at the hands of wise teachers build up in that school a sturdy, well-grounded opposition on the part of the children to the use of tobacco and alcoholic beverages in all forms, which finally crystallized in the formation of a school society by and among the pupils, with a pledge that was voluntarily signed and supported by more than ninety-five per cent of all the children in that school."

The results of scientific temperance teaching have not been confined to the formation of character of the pupil alone. A few instances of individual cases which have come to me through personal investigation will reveal the far-reaching influence of this study. A little Bohemian girl in the City of Chicago became intensely interested in the lesson taught her in the fourth grade of one of our Chicago schools. She carried the information home to her father that beer contained alcohol and that alcohol was poisonous in its effects. The father went to see the teacher, talked over the nature and effects of alcohol with her, and decided that beer was not only harmful, but an exceedingly expensive drink. He was engaged in work where he was given lemons from which the juice had been extracted. He decided that sufficient juice still remained in the lemons to give a flavor to the water drunk by the family. So he substituted this mild form of lemonade for the beer which he had previously used. The little girl is now a woman grown and no alcoholic drink has ever been used in her father's home since that time.

Again, a high school teacher in S——, Washington, who had in her classes two young men, sons of a wealthy wholesale liquor merchant, told me the following: At the close of the senior year of the older boy the father conceived the idea of opening a retail department in connection with his wholesale establishment and putting the two boys in charge of the two businesses, paying each of them eighteen hundred dollars a year. When he was remonstrated with by the teacher for putting the young men into places of such temptation, he said to her, "I have taken care of that. I know just as well as the boys do the truth they have had in the schools concerning strong drink and I have had them both swear before the priest not to touch one drop of liquor while they are in the business."

A wealthy wine grower in the State of Texas who had been given a toast to which he was to respond at a banquet of his local high school said, concerning the influence of the public school teaching on the character of the pupils, "My boy is the smartest boy in Texas. He will not drink my wine and my wine is the best wine made in Texas; but he says that the books say alcohol hurts the brain, that it unsteadies the nerves, that it affects the whole system and he will not touch it. He wishes to have a strong body and he has it. He is the smartest boy in Texas." These cases might be multiplied *ad infinitum*, for careful investigation has been made in a number of states as to such effects upon individual life and the life of the homes from which the children come. In view of such facts, the conclusion reached by Dr. Samuel J. Barrows is self-evident, that "one reason for the silent, steady growth of temperance sentiment is the systematic and semi-scientific temperance teaching enforced by moral and religious precept and example, organized and stimulated in the schools throughout the country by the Woman's Christian Temperance Union. A new generation has grown up and found that alcoholic drinks are not necessary for health or happiness."

It is not probable that the present rules of large business houses came directly from scientific temperance teaching in the schools, but this teaching must have set all intelligent men to thinking so that when the great Western Electric Plant, of Chicago, noticed that in their shops a larger number of accidents occurred uniformly in the early afternoon rather than in any other part of the day, they immediately suspected the cause. It seemed to be a clear case

of cause and effect, for they found out that in almost every case the victim of the accident had taken beer with his lunch. The teaching of the schools thus found proof in actual experience, and an order was issued forbidding any one to bring beer upon the grounds, or into the building upon penalty of dismissal from the employ of the company. When a scientist, like Dr. Lauder Brunton, proves that "alcohol increases the reaction time, the time for discrimination and the time for decision, that it makes all the nervous processes slower, but at the same time has the curious effect of producing a kind of anesthesia, so that all these processes seem to the person himself to be quicker than usual, instead of being, as they really are, much slower," and such facts are learned by the high school boy, it would be strange if the keen insight of the modern railroad financier did not at once see the reason for the failure of his employees to distinguish signals and protect himself and his business accordingly. In 1896 one of the officers of a large railroad corporation was asked "What led to the order issued by your company forbidding the employment of men to run trains who are users when on or off duty of alcoholic drinks or tobacco?" The reply was "Why, even the children in the public schools know that tobacco, as well as alcohol, blunts the perceptive faculties. You cannot expect to teach these things to the children and trade not take the hint. We want the men who run our trains to be in full possession of their faculties. We want the best service a man can give for the money we pay him. We are surer of getting that from the men who neither smoke nor drink and that is the reason why we forbid these habits in the men in our employment."

Recent legislation shows perhaps more clearly than anything else the results of teaching in the schools the nature and effects of alcohol. In 1890, the Supreme Court of the United States, in response to the demand for compensation for a revoked license to sell alcoholic drinks, handed down this decision: The injury from alcohol "first falls upon the drinker in his health, which the habit undermines, in his morals which it weakens, and in the self-abasement which it creates. As it leads to neglect of business and waste of property and general demoralization, there is no inherent right of the citizen to sell intoxicating liquors by retail." A lawyer, and ex-United States Senator of national fame, in commenting on this decision, said: "The right to prohibit the sale of alcoholic drinks

is based on the decision of science that alcohol is not a food, but a poison." Now multiply this decision by the many decisions involving alcohol in the different courts of the different states and some idea may be formed of the value of teaching in the schools the demonstrated fact that alcohol is a poison and therefore a prohibitable substance. In 1901 Senator J. H. Gallinger, in his speech upon the law prohibiting the sale of beer or alcohol in any form to our soldiers in army posts or canteens, quoted passages from a school physiology showing the harmful effects of beer. Can we doubt that such teaching in the schools of the nation lies back of the many temperance laws that have been enacted during the past decade?

Well did the German philosopher say, "What you would have your people, that put into your schools." The demand of the banks to-day in employing young men is that they not only do not use alcoholic liquors, but that they shall not be seen in places where they are sold. About one million men are required by the great railroad companies to be total abstainers. The large manufacturing companies and the corporations engaged in commerce are making the same requirements, for steam and electricity are the motive powers of the present industrial world, and the teaching of science that alcohol is a brain poison shows clearly that the workman using it is unfit to handle these things. When one reads in a text-book, as in the "Human Body," by H. Newell Martin, D.Sc., M.A., F.R.S., that the results of the use of alcohol are as follows: "He who was prompt in the performance of duty begins to shirk that which is irksome; energy gives place to indifference, truthfulness to lying, integrity to dishonesty. For even with the best intentions in making promises or pledges, there is no strength of will to keep them. In forfeiting the respect of others, respect for self is lost, and character is overthrown," he does not wonder that the result of such teaching, carried into business, is that no railway, telegraph, telephone or factory manager is willing to entrust the management of costly equipment and the protection of hundreds of human lives to one who is addicted to the use of alcoholic liquors.

Many years ago the results of the teaching of the nature and effects of alcohol upon the human system were recognized abroad, and the English press argued that the rank of the United States in the world's commerce was due to the greater sobriety of the American workman. This sobriety was attributed to the temper-

ance teaching in the elementary schools. Accordingly, in 1904, upwards of fifteen thousand members of the medical profession in Great Britain and Ireland petitioned for compulsory education in hygiene and temperance in their public and elementary schools, with the present result that hygiene and temperance are a part of the English public school system. Sweden accepted the same methods for inculcating the truth, and even sent her teachers to the United States to learn how to teach physiology and hygiene with special reference to the nature and effects of stimulants and narcotics. France began the teaching of hygiene in her schools in 1897. Finland made the teaching a part of her public school system, with the result that in the few years which it has been taught, the consumption of liquors has decreased from twenty litres to two litres per capita. The Woman's Christian Temperance Union is now introducing this instruction through special missionaries sent for the purpose into Japan, India and China. Thus the result of the teaching of the nature and effect of alcohol on the human system in the United States is bringing about the same teaching throughout the world. In consequence of this teaching, an intelligent interest in all that pertains to good health has naturally followed. This is recognized as one of the important results of scientific temperance instruction, for in the Journal of the American Medical Association of 1900 we read: "The people of the present day exhibit more intelligent interest in the discussion of sanitary problems, both public and private, than any preceding generation and this interest seems to be steadily increasing. A large share, in our opinion, in this country, at least, may, with justice, be attributed to the systematic study of physiology and hygiene, including the scientific temperance instruction which for some years has been a part of the regular course of study for pupils in our public schools."

That such results as the foregoing may accrue from any system of education but proves the truth of Lord Brougham's words: "Let the soldier be abroad if he will, he can do nothing in this age. There is another personage, a personage less imposing in the eyes of some, perhaps insignificant. The schoolmaster is abroad, and I trust to him, armed with his primer, against the soldier in full military array."